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**Tumor suppression by the histone demethylase UTX.**

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**Public Summary:**

All the cells in the human body carry the same genetic information in the form of DNA. The process of choosing which genes are stably switched ON or OFF, termed epigenetics, determines whether a cell will become a brain cell, heart cell, or skin cells. This work seeks to understand the epigenetic control when stem cells become differentiated cells. We have uncovered mechanisms governing the choice between self-renewal (a stem cell copying itself to make more stem cells) versus differentiation (a stem cell becoming a specialized cell and no longer dividing). An enzyme named UTX is a histone demethylase, which function by changing the packaging of DNA in cells, termed chromatin. We discovered that in differentiated cells, but not embryonic stem cells, UTX controls genes that makes cells stop dividing and differentiate. One of these UTX target genes includes RB, a gene that is important to prevent cancerous growth.

**Scientific Abstract:**

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